

REMARKS/ARGUMENTS

Claims 1 to 13 were rejected under 35 U.S.C. §103(a) as being unpatentable over either Talley, Jr. et al., U.S. Patent No. 6,767,498, Wagner et al., U.S. Patent No. 6,838,043, or Dugan et al., U.S. Publication No. 2003/0062658 in combination with Kato, U.S. Patent No. 4,908,176.

Reconsideration of the application is respectfully requested.

Rejections under 35 U.S.C. 103(a)

Claims 1 to 13 were rejected under 35 U.S.C. §103(a) as being unpatentable over either Talley, Jr. et al., U.S. Patent No. 6,767,498, Wagner et al., U.S. Patent No. 6,838,043, or Dugan et al., U.S. Publication No. 2003/0062658 in combination with Kato, U.S. Patent No. 4,908,176.

Talley Jr. et al. discloses multicomponent filaments or fibers that “can be formed into a fabric structure, and the multicomponent fibers split during or after fabric formation. For example, staple fiber can be fed into a carding apparatus to form a carded layer.” (See col. 14, lines 29-33). The “nonwoven web can be formed into a unitary coherent nonwoven fabric and thereafter thermally treated to split the fibers.” (See col. 16, lines 18 to 20). Additionally, if complete splitting of the multicomponent fibers is not achieved via thermal treatment additional splitting can be achieved by the simple working of the yarn or fabric. “For example, the yarn or fabric can be placed under tension to re-stretch the elastomeric filaments and then released to cause the elastomeric filaments to relax.” (See col. 16, lines 60 to 64).

Wagner et al. discloses a “process for the production of a synthetic leather, includes the steps that multi-component endless filaments are spun from the melt, aerodynamically stretched, and immediately deposited to form a nonwoven layer, that preliminary bonding takes place, and that the nonwoven fabric is bonded by high-pressure fluid jets and, at the same time, split into supermicro endless filaments with a titer < 0.2 dtex, and subsequently impregnated and/or coated with a polymer.” (See col. 2, lines 24 to 33).

Dugan et al. discloses a fabric formation process used “to dissociate the multicomponent fiber into microfilaments. Stated differently, forces applied to the multicomponent fibers of the invention during fabric formation in effect split or dissociate the polymer components to form

microfilaments.” “The hydroentangling process used to form the nonwoven fabric dissociates the composite fiber.” (See paragraph [0063]).

Kato discloses “coating or impregnating a mat made of non-woven fabrics with an aqueous emulsion of a thermoplastic resin having a moldable temperature range of 80 to 180°C in such an amount that the solids content of the emulsion is 15 to 300 wt% based on the weight of the fiber in the non-woven fabric mat, heating and drying the mat to remove water, and then compressing the non-woven fabric mat to control the apparent density of the mat to 0.15 to 0.5 g/cm³.” (See col. 2, lines 50 to 59).

Claim 1 one of the present application provides a method for manufacturing a fabric from yarns, fibers or filaments, including first elementary filaments of a first polymer and second elementary filaments of a second polymer, the method comprising:

receiving the yarns, fibers or filaments, from a common spinneret;

forming the yarns, fibers or filaments into a single first fabric;

compressing the first fabric to a density of at least 10% of a density of the first polymer, the compressing being performed at a temperature between a glass transition temperature and a melting temperature of the first polymer; and

subsequently applying a further mechanical force so as to cause an at least partial splitting of the yarns, fibers or filaments into the first and second elementary filaments.

None of the prior art discloses “compressing the first fabric to a density of at least 10% of a density of the first polymer, the compressing being performed at a temperature between a glass transition temperature and a melting temperature of the first polymer.”

The compressing in Kato does not meet the limitation of “compressing the first fabric to a density of at least 10% of a density of the first polymer” as claimed in the present application. The density before the compressing in Kato is 0.12 g/cm³ and the density of the fibers is not disclosed. Furthermore, the temperature in Kato is dependent upon the melting point of the emulsion resin. The compressing does not occur at “a temperature between a glass transition temperature and a melting temperature of the first polymer” as claimed.

Moreover, claim 1 recites “applying a further mechanical force so as to cause an at least partial splitting of the yarns, fibers or filaments into the first and second elementary filaments.”


It is respectfully submitted that it would not have been obvious to one of skill in the art to have provided any compressing step *prior* to the applying step, and this temporal relationship is not addressed at all.

Withdrawal of the rejections to the claims under 35 U.S.C. §103(a) is respectfully requested.

CONCLUSION

The present application is respectfully submitted as being in condition for allowance and applicants respectfully request such action.

Respectfully submitted,
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